CLAIMS

1. A laminated metal sheet obtained by laminating two types of film including a high melting point film and low melting point film on the two sides of a metal sheet, said laminated metal sheet characterized by having a low melting point film thickness d2 defined by the following equation 1:

$$d2(\mu m) \geq k(\Delta MP - \Delta T)/V$$

where, $\Delta MP = MP1 - MP2$

MP1: melting point of high melting point film (°C)

MP2: melting point of low melting point film (°C)

k: constant determined by low melting point film's heat conductivity, heat capacity*, and temperature, $k \geq 2$ [$\mu m \cdot m/(°C \cdot s)$]

$$0 < \Delta T = MP1 - \Phi \cdot Ti \leq 50 (°C)$$

Ti: metal sheet temperature at lamination roll inlet side (°C)

Φ: constant determined by heat removal conditions at time of lamination ($0.75 \leq \Phi < 1$)

V: sheet running speed (m/s)

2. A laminated metal sheet as set forth in claim 1, characterized in that said high melting point film is comprised of polyester-based resin and said low melting point film is comprised of a polyolefin-based resin.

3. A laminated metal sheet as set forth in claim 2, characterized in that said polyester-based resin is selected from polyethylene terephthalate, a polyethylene terephthalate/isophthalate copolymer, polyethylene naphthalate, a polyethylene terephthalate/naphthalate copolymer, a mixed resin of polybutylene terephthalate and polyethylene terephthalate, a mixed resin of polybutylene terephthalate and a polyethylene terephthalate/ isophthalate copolymer, and further one of these resins including a pigment or dye.

4. A laminated metal sheet as set forth in claim 2, characterized in that said olefin-based resin is selected from a polypropylene, polyethylene, a polypropylene/ polyethylene random copolymer, or these resins including a pigment or dye.

5. A laminated metal sheet as set forth in claim 1, characterized in that a difference ΔHz between a haze value Hz2 of a low melting point film after bending a sheet of a thickness of 1 mm by 180 degrees across said high melting point film side and a haze value Hz1 of the low melting point film before bending is made not more than 20%.

6. A laminated metal sheet as set forth in claim 5, characterized in that the haze value Hz1 of the low melting point film before bending is made not more than 60%.

7. A laminated metal sheet as set forth in claim 1 or 2, characterized by using for said high melting point film a biaxially stretched polyester-based resin film and leaving crystal orientation at that surface layer.

8. A laminated metal sheet as set forth in claim 1, characterized in that, among the two types of film including said high melting point film and low melting point film, when the melting points inside the films differ according to the position in the thickness direction, the lower one of the surface melting point of one film at the side contacting the roll is designated as MP2 and the film melting point of the other film at the metal sheet side is designated as MP1 for calculation and lamination.

9. A laminated metal sheet as set forth in claim 8, characterized in that the sheet running speed V defined in (1) is made 1 to 3.5 m/s for lamination.